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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,926	07/10/2006	Oleg Grudin	14836-10US	7867

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EXAMINER	
SIEK, VUTHE	

ART UNIT	PAPER NUMBER
2825	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/549,926	GRUDIN ET AL.	
	Examiner	Art Unit	
	Vuthe Siek	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-64 and 66-82* is/are pending in the application.

4a) Of the above claim(s) *1-49,64 and 66-82* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *50-63* is/are rejected.

7)☒ Claim(s) *56-58* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/24/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to application 10/549,926 and response filed on 03/11/09. Claims 1-64 and 66-82 remain pending in the application, where claims 50-62 are elected with traverse for examination, claims 1-49 and 63-64 and 66-82 are non-elected.

Specification

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the abstract is not on a separate sheet. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 50 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The steps of how to apply a heating cycle to trim said resistance value away from a target resistance value and back to said target resistance are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. Also the steps of how to modify the temperature coefficient of resistance after applying said heating cycle by cycling said resistance value away from and back towards a starting point are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Without these steps described above, it is unable to make and use the claimed invention (see Fig. 5).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 50 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The step of applying **a heating cycle** to trim said resistance value **away from a target resistance value and back to said target resistance value** is unclear and vague. In addition, the metes and bounds cannot be determined. The recitation of "wherein the temperature coefficient of resistance is modified after applying

said heating cycle by cycling said resistance value away from and back towards a starting point" is confused and vague. What is relationship between "temperature coefficient of resistance" and "resistance value". The metes and bounds of the claim limitation cannot be found.

7. Claim 50 provides for the use of hysteresis characteristic of said thermally mutable material, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 50 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

9. Claims 50-63 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. For example, claim 1 as representative is directly to a process. In order to be statutory, a process claim should either be tied to another statutory class (such as a particular machine or apparatus), or transform

underlying subject matter (such as an article or materials) to a different state or thing. In this case, there is no such transformation and it also does not appear that the recited process being tied to a particular apparatus or machine, as each of the recited steps may be reasonably done by a person. Thus, in order to qualify as a ***§ 101*** statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state or thing. (see *In re Bilski,* 88 U.S.P.Q.2d 1391 (Fed. Cir. 2008) (*en banc*) & MPEP 2106.IV.B).

10. Claim 50 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed invention lacks patentable utility. The claim invention pertains to trimming a temperature coefficient of resistance comprising a single step of applying a heating cycle, wherein the temperature coefficient of resistance is modified after the application of heating cycle. It appears that there is no tangible result that is produced and useful.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 50-55 and 59-63 are rejected under 35 U.S.C. 102(e) as being anticipated by Nelson et al. (US 2003/0101573 A1).

13. As to claim 50, Nelson et al. teach a method for trimming a temperature coefficient of resistance of at least one electrical component made from a thermally mutable material possessing a hysteresis characteristic (Fig. 1 show conductive material 12 on a substrate 10 includes possessing a hysteresis characteristic; 0009, 0011, 0013; Fig. 1 describe material including hysteresis characteristic) with respect to a dependence of said temperature coefficient on said resistance (0011, 0016), while maintaining a substantially constant resistance value (0019), the method comprising applying a heating cycle to trim said resistance value away from a target resistance value (equation shown under 0016, 0019) and back to said target resistance value (0016-0027; applying temperature at different heating cycle about 1000-1300 degrees C at different times shown in Fig. 4, where resistance is changing from trimmed value), wherein the temperature coefficient of resistance is modified after applying said heating cycle by cycling said resistance value away from and back towards a starting point (0016-0027, resistance overshoot is a function of the thermal coefficient of resistance of material 12, the target resistance and the temperature rise; the parameters are measured during trimming process, the resistance overshoot is determined, and the trimming process is adjusted accordingly to compensate for the thermal change in the resistance of material 12 such that the desired resistance value realized; 0024) , thereby using said hysteresis characteristic of said thermally mutable material (0016-0027; 0009, 0011, 0013; Fig. 1).

14. As to claim 51, Nelson et al. teach, wherein applying the heating cycle (0020, 0025) comprises using a first set of pulses to trim away from said target resistance value (refiring is achieved by subjecting unit 16 to an elevated temperature of about 1000 degrees C to about 1600 degrees C; resistivity decreases with time until an inflection point is reached; 0025, 0020) and pulses of amplitudes lower than said first set of pulses to trim back to said target resistance value (after which resistance will rise due to vaporization of the material 12, where at this point, it appears that a second set of pulses is applied with lower or equal to the first set of pulses because the temperature must be lower or equal to 1600 during vaporization of the material 12; 0025; 0020).

15. As to claim 52, remarks set forth in rejection of claim 51 applied because of the similar claim limitation.

16. As to claim 53, Nelson et al. teach wherein said plurality of heating pulses have varying amplitudes (0020-0025).

17. As to claim 54, remarks set forth in rejection of claim 51 applied because of the similar claim limitation.

18. As to claim 55, Nelson et al. teach applying a second heating cycle to continue trimming said temperature coefficient of resistance (0016-0027; Fig. 4; repeating trimming at different times T1, T2, T3).

19. As to claim 59, Nelson et al. teach, wherein said electrical component is a resistor (Fig. 1, 3).

20. As to claim 60, Nelson et al. teach, wherein said electrical component (Fig. 1, resistor 12) is on a thermally isolated micro-platform on a substrate (Fig. 1, substrate 10).

21. As to claim 61, Nelson et al. teach, wherein a resistive heating element is provided for generating said heating cycle (Fig. 1, heating cycle generated by Laser unit 22 applied to resistive material 12; 0016-0024).

22. As to claim 62, Nelson et al. teach, wherein said heating element is on said thermally isolated micro-platform (Fig. 2 show heating element 16 on thermally isolated micro-platform 18).

23. As to claim 63, Nelson et al. teach, wherein said at least one electrical component is a pair of matched resistors, and said temperature coefficient of resistance is a relative temperature coefficient of resistance (Fig. 3 show matched resistors 34, 32 providing balanced of resistance; 0028).

Allowable Subject Matter

24. Claim 56 and 57-58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims; and if rewritten to overcome the rejection(s) under 35 U.S.C. 112, first and second paragraphs and 101 issues, set forth in this Office action.

25. The prior art of record does not teach or fairly suggest the limitation claim 56, wherein said second heating cycle comprises a first pulse of equal or greater amplitude than a first pulse of a previous heating cycle; and the limitation of claims 57-58

comprising applying a plurality of subsequent heating cycles to further trim said temperature coefficient of resistance to a target temperature coefficient of resistance and wherein said applying a plurality of subsequent heating cycles comprises trimming said temperature coefficient of resistance below said target temperature coefficient of resistance and gradually increasing said temperature coefficient of resistance to said target temperature coefficient of resistance.

Remarks

26. Applicant's arguments filed 03/11/09 regarding to restriction have been fully considered but they are not persuasive. It appears that claims 1-16 regarding to a method of adjusting resistance of an electronic component, where claims 50-63 pertain to a method for trimming a temperature coefficient of resistance of an electronic component. Cleary they are different inventions, if not restriction it would burden the Examiner. The restriction is therefore made final.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vuthe Siek whose telephone number is (571) 272-1906.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on (571) 272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Vuthe Siek/
Primary Examiner, Art Unit 2825